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Applicant: TOKUSHU PAPER MFG. CO., LTD.

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Title of the Invention: Manufacturing method of papers containing threads

Claim 1:

A manufacturing method of papers inserted with continuous threads wherein continuous threads are embedded in a position of paper intermediate layer by releasing continuous threads to the paper intermediate later, which is in the process of being formed, via a tubular guide nozzle in an initial stage where the paper layer is formed on a wire cloth of a tanmo- or Fourdrinier-machine.

Constitution:

In Fig. 1 showing a cross section of a paper forming section in a paper machine in a paper flow direction, symbols (a) and (b) indicate slices, (c) wire cloth, (d) breast roll, and (e) flow box section, respectively. (1) shows a tubular guide nozzle for inserting threads, (2) a thread bobbin for incorporation and insertion, (3) an orifice where threads go through, (4) an end section of the tubular guide nozzle positioned in a paper material flow, (5) a supporting instrument for adjusting a position of the tubular guide nozzle end in a vertical direction, and (6) a thread let out from the bobbin.

The continuous thread (6) drawn from the bobbin (2) is introduced into a guide nozzle via the orifice (3) and released into the paper material flow from the end section of the guide nozzle (4). The thread (6) is embedded in the paper layer while paper materials are gradually dehydrated and the wet paper is formed on the wire cloth (c) and by pressing and drying the resultant papers, the papers containing threads formed from one layer are continuously manufactured.

Inserting position of threads can be determined by the setting of the tubular guide nozzle (1) or the set position of the tubular guide nozzle end (4). Set position of the guide nozzle end (4) in the flow direction needs to be in a position where the thread (6) can be released into the paper intermediate layer in an initial stage where the paper layer between the slices (a) and (b) is formed since the position of the guide nozzle end (4) in the paper material flow direction was discovered important from the experiment.